

**ABSTRACT**

The invention provides a process for treating a polyester fiber comprising the steps of providing a bicomponent fiber comprising poly(ethylene terephthalate) and poly(trimethylene terephthalate) which has been heat-treated at a first temperature and cooled to lower than about 70°C and has an initial crimp contraction value and a developed crimp contraction value, applying tension to the fiber of about 0.001 to 0.088 dN/tex, heat-treating the fiber at a second heat-treating temperature no lower than about 75°C and no higher than the first heat-treating temperature, cooling the fiber to lower than the second heat-treating temperature, and releasing the tension from the fiber to give a fiber having a reduced crimp contraction value. The invention also provides a bicomponent fiber comprising poly(ethylene terephthalate) and poly(trimethylene terephthalate) having a reduced crimp contraction value of about 6% to 15%.